Visit of The Institute to the London Press Exchange Limited

Introductory Comments

THE Institute visited the London Press Exchange in St. Martin's Lane W.C.1, on Thursday November 29th, and was welcomed by Dr. Mark Abrams, Research Director of the London Press Exchange. A number of papers, which are summarized below, were given on statistical aspects of an advertising agency's work, followed by discussion.

The work of the London Press Exchange Organization centres on advertising, both in this country and overseas. Apart from full-scale advertising agencies, the organization contains subsidiary companies dealing independently with design and printing, with marketing and merchandizing, and with market and social research. In terms of size—with a staff of well over 1,000—the L.P.E. is representative of the larger advertising agencies.

Amongst this staff up to 100 can be counted (excluding financial accounts departments and clerical staff) whose work revolves largely on handling statistical information—media planners and buyers, research executives and so on. The additional number of those who have frequent recourse to statistical information—market and media surveys, etc.—is also large. In that sense statistical information plays a large role in the work of an advertising agency.

About half a dozen executives have a formal academic background in statistics. It is however, symptomatic that several of the papers summarized below were given by executives who would quite rightly disclaim technical expertise in statistics, but whose experience has all the same given them a strong statistical "feel" for their problems.

The statistical problems which face advertising at present lie more in increasing the amount of valid and useable information than in methods of analysis as such. Whilst a good deal of work is being done on methods of handling the new and more complex data that are becoming available, the primary task is still to try and define the various practical problems in advertising in such a way that new or improved techniques of obtaining relevant data can be developed.

Press Audience Research

Mr. C. G. F. Nuttall (Adviser on Campaign Planning—London Press Exchange)

In comparing and contrasting the problems of collecting and applying audience research information on the press and on television, it should be possible to give an impression of the present and future role of statistical skills in these fields.

The object of audience research is to guide the Campaign Planner in placing advertisements so as to maximize the opportunities afforded to the target audiences of seeing these advertisements. The characteristics of the target audience for an advertising campaign is usually defined by past consumer research.

There are a number of aspects of the readership of newspapers and magazines that make it particularly difficult to measure on a comparative basis the opportunities they afford for the exposure of advertisements. First there are a very large number of publications carrying advertising between which the planner would like to make comparisons; for example, the L.P.E. are currently using some 400 publications on their schedules, and that is without counting any of the 1,300 or so provincial papers. Secondly, publications are read in a great variety of different ways; for example some publications are just glanced at, while others are read thoroughly; some are thrown away after a day or so, while other may continue to be read over many months. And thirdly, the influence of the editorial content on the effectiveness of the advertisements is believed to vary from publication to publication. The problems of measuring television audiences are very different from these, and in some way less overwhelming.

Our main source of readership data comes from the I.P.A. National Readership Survey. This survey is continuous and provides readership figures every six months over some 90 of the most important publications. The characteristics and numbers of readers claiming to have "looked at" an issue of these publications over defined periods can be compared and some examples were given of the kinds of analyses that are regularly extricated from this survey.

There followed a series of examples of some of the other measures that have been employed in this country and in the U.S.A. which indicate both the wide range of different ways in which publications are read and the relevance that some of these differences would seem to have to readers' "opportunities of seeing advertisements." Some examples of the statistical work that has been carried out on the accumulation of readers over different issues of the same publication were then given, and some of the problems peculiar to magazine audience measurement were discussed. More and more the application of survey data in press media planning will become a matter of knitting together a variety of measures about reading behaviour, a process for which the skills of the statistician will become increasing necessary.

Television Audience Research

Mr. A. S. C. Ehrenberg (Deputy Managing Director—Research Services Limited).

1. Buying time on Independent Television for running an advertising campaign should seek to maximize in some sense the exposure of

the relevant target population. The direct and routine measurement of exposure to television advertisements has, however, proved impracticable so far. Approximations have to be sought to reflect major variations in exposure. In this respect both the relevant simplicity of television as an advertising medium compared with the large number of press publications, and the highly fluctuating size of television audiences compared with the relative stability of press readership were noted.

2. Television audience research as carried out on an industry basis now follows two fairly standard procedures:

(*a*) Electro-mechanical meters are used to monitor the fluctuating audience for every minute of transmission time, and in particular for each and every commercial break. However, sample sizes are small (75–150 per transmission area) and the audience measure relates only to whether or not a set was "on" (measured separately for I.T.V. and B.B.C.).

(*b*) The viewing of individual persons is measured both by continuous diary panels (relatively small sample sizes again) and by aided recall surveys (larger samples). Such viewing data can however relate only to 15-minute time periods and not directly to the audience for any interspersed commercial breaks.

Extensive experimental work has shown that, on the whole, no major discrepancies need exist between the techniques as such. Evaluation of their relative efficiency for measuring short-or-long-term trends, absolute audience sizes, audience composition, schedule analyses, etc. however, still leaves considerable problems.

3. The individual advertising agency's role in such industry research consists of suitably influencing technical decisions and providing its share of financial support, apart of course from actually using the data provided. However, an agency may also find that it must undertake additional research on its own, to give better service to its clients.

As an example of this, the L.P.E. and also two other large agencies have in the last year or two each undertaken independent research, aimed at going beyond the inherent limitations of the industry's standard research techniques in measuring advertisement exposure. One point of interest in these research projects has been the marked differences in the detailed problem formulation and in techniques.

New measures used were firstly behavioural (i.e. assessing the extent to which viewers as normally measured were also engaged in other, possible distracting, activities or even momentarily out of the room). Secondly, certain test procedures were used for the recall of commercials that had been shown in a given break, as a more direct measure of attention. Sizeable differences in the nature of the

audience as measured by the standard techniques were found in this way according to time of evening, day of week, interest of the programme material surrounding the break, position of the break, and the demographic characteristics of the viewers.

This new type of information can provide "correcting factors" for the standard continuous audience data. However, the relevant weighting of the different viewing categories thus established raises a range of new problems.

4. An increasing if still rather slow trend is noticeable in T.V. audience research (as also in other fields of media and market research). Instead of going out into the field to try and measure *directly* everything one wants to know, different sets of data are combined to provide *indirect* estimates of what is required. An example has just been given in the use of "correcting factors" for the standard audience measures provided by the industry. A potential further example lies in the very extensive multiplication of the same kind of research in each of the 12 or so television areas; undoubtedly certain regularities in the audience data could be used to provide indirect estimates and to economize on these repetitive data collection procedures.

Further progress in audience research will depend heavily on an acceleration of this trend towards using indirect estimates, both because the complexity of the problems will not always allow a simple, direct measurement approach and because of the sheer economics of this kind of work. However, such progress calls for an increasing willingness to accept "estimates" as well as direct "facts" and to make the necessary long-term research investments.

Advertising Research

Mr. J. M. Caffyn (Communications Research Director—London Press Exchange.)

A simple diagram of the advertising/marketing situation was described, and the decision points at which advertising/promotion can be directed were noted. A large analytic study by du Pont that set out to discover the relationship between advertising and sales for one of their brands was outlined. Field research provided data from which mathematicians were able to predict market share for the brand with an accuracy of + or −1 per cent. The incidental findings of such a study that were of particular interest to advertising people were also noted. Different models would of course have to be considered for different products, where different important variables were operating. There are however two general aspects of such studies: (i) they will normally be concerned to maximize company profitability; and (ii) every product is a separate problem.

Because of the long time and high expense normally required to

collect the necessary data, such studies have to date been limited. Examples were given however of the kind of occasion when simplified statistical analysis of part of the total advertising problem could make a real contribution to advertising decisions.

Finally examples were given from the field of "copy research" (the pre-testing of advertisements or advertising material) where statisticians were involved with both the preparation of the complex factorial designs that are often necessary, and with the interpretation of results from such tests.

Mr. D. M. Monk (Director—Research Services Limited).*

A wide range of problems arising in advertising research call increasingly for controlled experimental design for their solution. Thus a recent experiment on advertisement sizes required about 4,600 possible combinations of the test variables and this number has to be reduced to manageable proportions—without loosing balanced comparisons of the crucial effects—by the application of statistical design theory. However the valid control of experimental variables is intrinsically more important and perhaps more difficult than such technical applications of design theory.

Advertising research under normal operating conditions is notoriously difficult to control, but even supposedly controlled experiments can be misleading through failure to exercise valid control. A recent study involved the detailed measurement for different individuals of their degree of exposure to an advertising campaign used to launch a new product. A striking positive relationship was then found between measures such as the awareness of the new product and the number of advertisements to which each individual had been exposed. (Such a relationship could then be used for planning further campaigns.) However, further analysis showed that awareness of *other* products increased similarly according to the number of exposures to advertisements of the *new* product. This then was not an experiment in which the amount of exposure had been effectively controlled with other factors held constant. Instead it amounted to, roughly, an assessment of product awareness for "heavy," "medium," and "light" viewers of television generally, despite the sophisticated new measures of individual exposure to the campaign which had been adopted.

In another study of advertising evaluation, a sample of viewers was randomly divided into three sub-groups. Two of these three sub-groups were enrolled to evaluate specified television programmes on B.B.C. and I.T.V. respectively, selected at the times of the television campaign in question. In theory, this gives a fully controlled

* In a forthcoming issue of the journal Mr. Monk will develop some of the points made in this summary.

experiment in which an under-exposed and an over-exposed group can be compared with the third sub-group, who had been exposed to the campaign in the normal way. In practice, this theoretical control is not in itself necessarily perfect. Subsequent extraneous disturbances can occur, such as differential co-operation rates correlated with the different "controlled" experimental conditions, unless the relevant precautions are taken—an illustration of how the usual difficulties of exercising *valid* control will occur in advertising research even when theoretically balanced experimental designs can be adopted.

A Case History—The B.E.A. Model

Mr. A. J. Burkart (Advertising Manager, British European Airways).

Mr. Burkart indicated that the importance of not spending more on advertising than is exactly necessary is particularly marked in the airline industry because additional capacity is not readily available at short notice to match excess demand generated by excessive advertising expenditure.

Mr. C. J. Taylor (Operational Research Officer, British European Airways).

Mr. Taylor outlined a simple method based upon a precise mathematical model which enables the advertising budget in a multiple unit campaign to be allocated in such a way as to maximize the expected value of a "score" determined by number of insertions seen. The main data required consists of the "readership" of each medium and the cost of and estimated "proportion of readers seeing" a particular insertion for each size available in that medium. The basic components of the method are firstly a rule to determine the optimal size of insertion for each medium, and secondly the use of marginal costs in order to determine numbers of insertions required.

Dr. S. R. Broadbent (Senior Executive, Research Services Limited).

In press advertising there is a bewilderingly wide range of publications available. To help us pick a schedule from these the primary information used is on the cost and the readerships of different publications, but there is much supplementary information in addition.

The model used to construct the B.E.A. schedule makes, for simplicity, certain drastic assumptions. Perhaps the most serious is that each person is either a reader (sees every issue) or a non-reader of a publication. There are, however, occasional readers. Several methods have been proposed to find the exposure distribution (proportions reading none, one, two, etc. issues) of a publication taking occasional readers into account: we have our own method which seems to be simple, flexible and accurate. We can also combine these

distributions for each publication to give the distribution for a schedule; this should prove a useful media tool. There are other approaches to this problem. One is to simulate (on a computer) the reading (and viewing) of a population to a proposed schedule. This will give not only an exposure distribution but the build-up of exposure with time. Marketing information can also be taken into account.

Another approach is to maximize some objective, such as a weighted sum of the exposure function (which may be cover, impact, response, etc.), or marketing parameters (brand switching probabilities etc.). The scope for using linear programming or other optimizing techniques is being more and more recognized in this work.